

MAGNETO RESISTANCE EFFECT ELEMENT AND ITS MANUFACTURE

Patent Number: JP11135857
Publication date: 1999-05-21
Inventor(s): TSUGE HISANAO
Applicant(s):: NEC CORP
Requested Patent: ☐ JP11135857
Application Number: JP19970298566 19971030
Priority Number(s):
IPC Classification: H01L43/08 ; G11B5/39 ; H01F10/16
EC Classification:
Equivalents: JP3050189B2

Abstract

PROBLEM TO BE SOLVED: To provide a magnet resistance effect element which has both large polarizability and a small coercive force by constituting at least one side of a ferromagnetic layer, which is not in contact with an antiferromagnetic layer of a soft magnetic film provided with a thin high-polarizability film on a tunnel barrier layer side.

SOLUTION: A ferromagnetic layer 13 constituting a free layer is constituted of a soft magnetic layer 16, provided with a thin high-polarizability film 15 on a tunnel barrier layer 14 side. The film 15 has a stronger coercive force than a thin film which is made of Permalloy (R), etc. However, the coercive force of the film 15 can be reduced, while the polarizability on the surface of the ferromagnetic layer 13 which is in contact with the tunnel barrier layer 14 is maintained at a high value. Since the magnet resistance variations of a ferromagnetic tunnel junction vary depending upon the property of the surface of thin ferromagnetic layer contribution to tunnel phenomena, the a free layer structure is adopted. Therefore, a magnetoresistance effect element having both a large polarizability and low coercive form can be realized.

Data supplied from the esp@cenet database - I2